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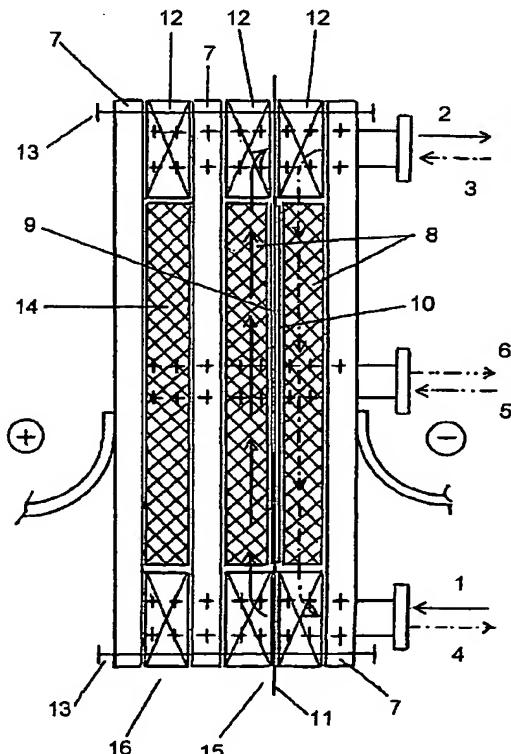
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(54) Title: MEMBRANE FUEL CELL COUNTERCURRENT-FED WITH NON-HUMIDIFIED AIR



(57) Abstract: The present invention describes a membrane fuel cell capable of operating in a stable fashion at high current density under dry reactant gas feed at near-atmospheric pressure. This result is obtained by employing internal porous gas distributors, such as three-dimensional reticulated materials, sintered materials, juxtaposed meshes or expanded sheets, and at the same time by countercurrent-feeding the gas reactants, preferably ambient air, from the bottom. In one preferred alternative liquid water is injected from the bottom into the air feed: with these operating conditions, an extremely simplified stable functioning is obtained, since the air and water flow-rates, adjusted as requested for the maximum nominal electrical output, are kept unvaried even at low or zero output conditions without the cell membrane undergoing dehydration.



FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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